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Autapomorphies in the generic classification of Plectrothripini (Thysanoptera, Phlaeothripinae), with a new genus and a new record from Malaysia

L.A. MOUND[1] & Y. F. NG[2]

[1]*Australian National Insect Collection, CSIRO, Canberra, ACT 2601, Australia. E-mail: laurence.mound@csiro.au*
[2]*Centre for Insect Systematics, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia. E-mail: ng_yf@ukm.edu.my*

Bangithrips mei **gen. et sp. n**. is described from Peninsular Malaysia. The significance is discussed of outstanding structural autapomorphies that are commonly used in classifications of Thysanoptera. *Argyrothrips ommatos* described recently from northern Australia is recorded from Malaysia.

The Plectrothripini is one of the few reasonably distinct sub-groups among the 3000 species comprising the Thysanoptera subfamily Phlaeothripinae (Dang *et al*. 2014; Mound & Tree 2017). Including the new species described below, this Tribe now numbers 60 species, but 32 of these are placed in the genus *Plectrothrips*, ten in *Streptothrips* and six in *Chirothripoides*, with both *Menothrips* and *Mastigothrips* each having two species, and the remaining eight species each placed in separate monobasic genera. These monobasic genera are all from the tropics, with two Neotropical, one Afrotropical, and five from southeast Asia or northern Australia. This strongly asymmetric classification within the tribe might suggest that this lineage is particularly old, with the large number of monobasic genera each representing a relict lineage; such an hypothesis would require support from either fossil or molecular data. An alternative possibility is that the striking autapomorphies on which each of these genera is diagnosed might indicate an unusual instability in the genes controlling the morphogenetic processes among Plectrothripini. As in most Phlaeothripinae, the tenth abdominal segment, the tube, is generally moderately long and tapering toward the anus. However, in the species of three of the monobasic genera considered here the tube is modified in various ways. In the Afrotropical *Adamantothrips* the tube is unique in having an angular swelling sub-distally, although, as indicated by Okajima (1981), the other body structures are essentially the same as those of the members of the widespread genus *Chirothripoides*. Similarly, the new genus diagnosed below shares most character states with *Chiridurothrips*, but has an unusually short, wide tube, a situation similar to that found in the Neotropical monobasic genus *Lonchothrips*. Among the species of the eight monobasic genera of Plectrothripini, four have antennal segment II aberrant in shape, either swollen on the inner margin or with an apical projection, and in a further Neotropical genus antennal segment I is prolonged on the inner margin. Singular autapomorphies such as these are commonly given great weight in classifications of Thysanoptera, resulting in the very high proportion of monobasic genera. Currently, 365 (47%) of the 780 genera listed in ThripsWiki (2018) are monobasic (excluding all fossil taxa) (see: http://thrips.info/wiki/Total_species_per_genus). The new genus proposed here follows this tradition. However, it is doubtful that this classification is a satisfactory reflection of phylogenetic relationships.

All of the species considered here are fungus-feeders, presumably feeding on hyphae or the external break-down products of fungal attack on decaying plant material. Patterns of character expression amongst these fungus-feeding thrips of the "Phlaeothrips lineage" (see Dang *et al*. 2014) continue to lead to difficulties in developing classifications at all levels. Mound (1972) questioned the value of recognizing as different species each slightly different population of leaf-litter thrips in the *Urothrips*-group. In contrast, Okajima and Masumoto (2014) accepted slight differences in sculpture as indicating species differences in the genus *Azaleothrips*, but emphasized that differential diagnoses for genera in the associated *Idiothrips* complex involved much overlapping of character states. There have been few ecological studies to underpin such taxonomic considerations, but Mound (1977) drew attention to the possibility that in leaf-litter available nutrients will at times be in excess of the needs of the total arthropod litter fauna, thus reducing the level of competition and increasing the possibility of genetic diversity. An additional factor is that populations of fungus-feeding thrips are often ephemeral at individual sites due to variation in rainfall, and this can lead to the production of localized demes. Certainly, the diagnosis of genera and species amongst Phlaeothripinae is more complicated than amongst phytophagous Thripinae.

In addition to the new monobasic genus described below, specimens of a further monobasic genus of Plectrothripini have been collected recently in Peninsular Malaysia. *Argothrips ommatos* Mound & Tree was described from a single

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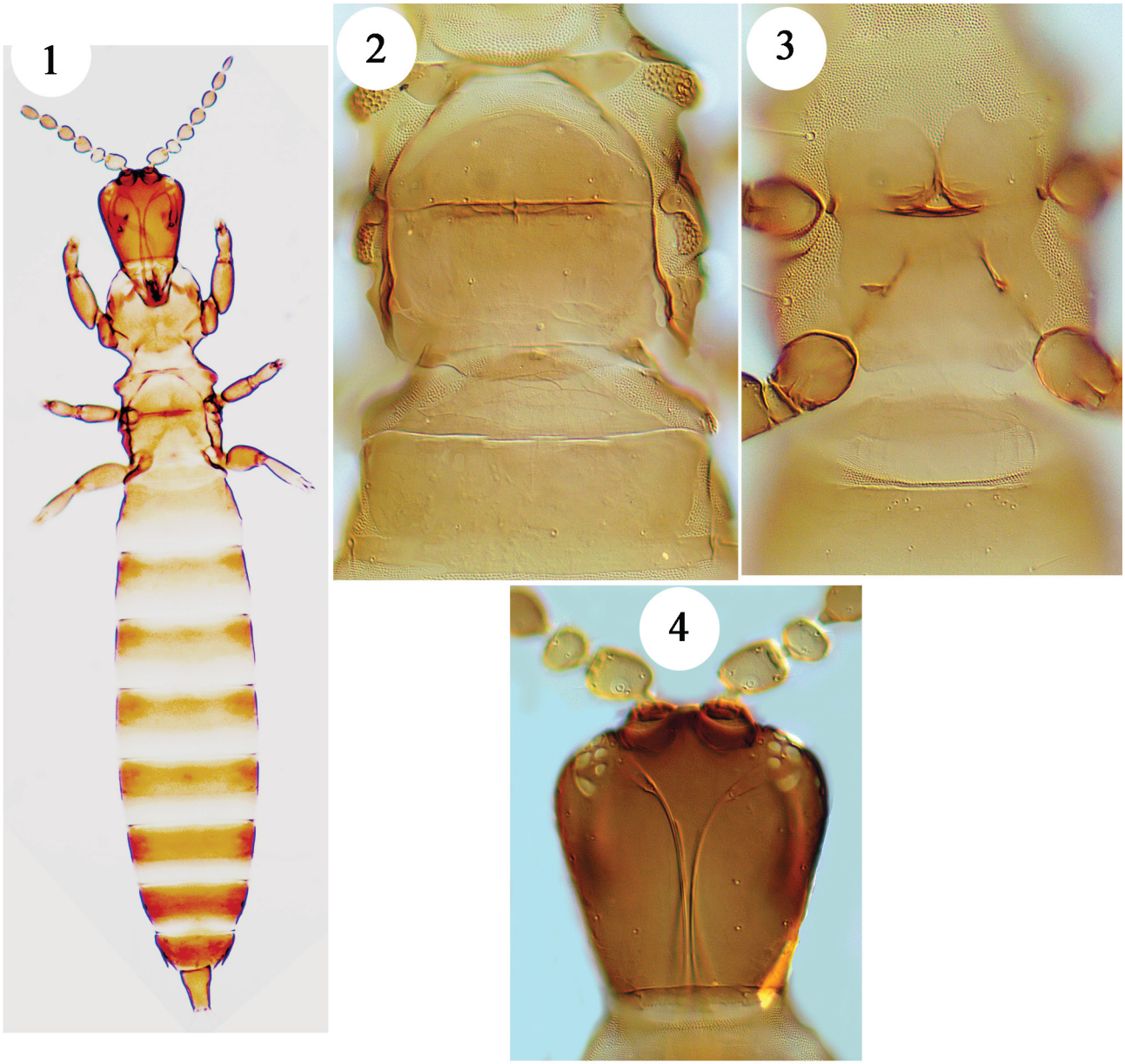
dealate female collected at Darwin in northern Australia. However, two apterous females of this species (Figs 1–4) have now been studied with the following data: **Peninsular Malaysia**, Kuala Lompat, Pahang, collected in a fogging sample from dead leaves, 30.xi.2010 (Ng, Y.F.) in Centre for Insect Systematics, Universiti Kebangsaan Malaysia.



FIGURES 1–4. *Argothrips ommatos*. **(1)** Female aptera. **(2)** meso & metanota, pelta & tergite II; **(3)** pro- & mesosterna; **(4)** head.

Key to Genera of Plectrothripini

(Based on Okajima, 1981; * from description)

1. Antennal segment II strongly asymmetric (Fig. 6), projecting on inner or ventral margin 2
-. Antennal segment II more or less symmetric (Fig. 4), not prolonged laterally or ventrally 5
2. Tube short, scarcely longer than maximum width (Fig. 9) 3
-. Tube 2.0 or more as long as maximum width 4
3. Antennal segment II without an apical tooth, inner margin with pronounced hump (Fig. 6) ..... *Bangithrips* **gen.n.**
-. Antennal segment II with apical tooth extending to apex of segment III ..... *Lonchothrips**
4. Pronotal setae minute except for elongate epimeral setae; antennal segment II inner margin with short blunt projection; tube 2.5 times as long as maximum width ..... *Chiridurothrips**
-. Pronotum with 5 pairs of long setae; antennal segment II prolonged ventrally to apex of segment III; tube scarcely 2.0 times as

long as maximum width ..... *Kremnothrips*

5. Mouth cone long, extending to mesosternum; maxillary stylets elongate, crossing over medially with an irregular coil laterally ... . *Xyelethrips*
-. Mouth cone not extending across prosternum (Fig. 1), stylets not long and convoluted 6
6. Prosternal ferna fused into a single plate..... *Mastigothrips**
-. Prosternal fernal plates separated 7
7. Sternite VIII posterior margin with 2–4 pairs of tooth-like projections..... 8
-. Sternite VIII posterior margin without long tooth-like projections..... 9
8. Tube widest at distal third, sharply angulate before narrowing to ring of anal setae..... *Adamantothrips**
-. Tube widest sub-basally, narrowing gradually to anal ring of setae ..... *Chirothripoides*
9. Antennal segments III and IV with at least 5 sense cones ..... *Streptothrips*
-. Antennal segment III with no more than 2 sense cones 10
10. Antennal segment III with one sense cone; compound eyes with one large facet displaced posteriorly (Fig. 4)..... *Argothrips*
-. Antennal segment III with 2 sense cones; compound eyes without a displaced facet 11
11. Antennal segment I elongate, inner surface prolonged..... *Priesnerothrips**
-. Antennal segment I symmetric, not elongate 12
12. Fore femur with prominent tooth on inner surface ..... *Menothrips**
-. Fore femur without a tooth..... *Plectrothrips*

Bangithrips gen.n.

Diagnosis: Head longer than wide (Fig. 5), not prolonged in front of eyes; posterior ocelli close to large compound eyes; vertex very weakly sculptured except near ocelli and along posterior margin; postocular setae long and finely pointed, placed laterally and well behind eyes; maxillary stylets probably deeply retracted and close together (dissociated in available two specimens), mandible small. Antennae 8-segmented (Fig. 6); segment II sharply angled with distinctive hump on inner margin, campaniform sensillum in basal half; III–VIII with faint closely spaced transverse sculpture lines; III–V each with 2 short, fat sense cones, VI–VII each with one sense cone; VIII elongate and slender. Pronotal shield with no long setae (Fig. 5), epimeral setae long, notopleural sutures incomplete; basantra absent (Fig. 7); ferna widely separated; mesopraesternum reduced to two small sclerites, mesoeusternal margin entire. Mesonotum weakly reticulate, lateral setae long (Fig. 8); metanotum longitudinally reticulate, median setal pair long and acute. Fore wing parallel-sided, with about 14 duplicated cilia, with two relatively short sub-basal setae. Fore femur robust with long setae on inner margin ventrally, tarsal tooth large and robust (Fig. 11); fore coxae large, each with a long seta. Mid and hind tibiae each with two very stout setae. Pelta broadly triangular (Fig. 8); tergite II lateral margins eroded; III–VII with no wing-retaining setae; tergite IX setae shorter than tube (Fig. 10); tube little longer than wide (Fig. 9), margins convex; anal setae shorter than tube. Sternites without reticulate areas, with transverse row of 6–8 setae; median marginal setae long.

Type species ***Bangithrips mei*** **sp.n.**

Comments. The basal position of the campaniform sensillum on the second antennal segment, the proximity of the posterior pair of ocelli to the compound eyes, and the lateral erosion of abdominal tergite II indicate that this new genus is a member of the Plectrothripini, despite the lack of any glandular reticulation on the sternites. It seems to share most character states with *Chiridurothrips*, but the only species in that genus has a tapering tube that is slightly longer than the head, with the major setae on tergite IX as long as the tube. In contrast, this new species has the tube less than 0.3 as long as the head, and the setae on tergite IX are amongst the shortest recorded in Phlaeothripidae.

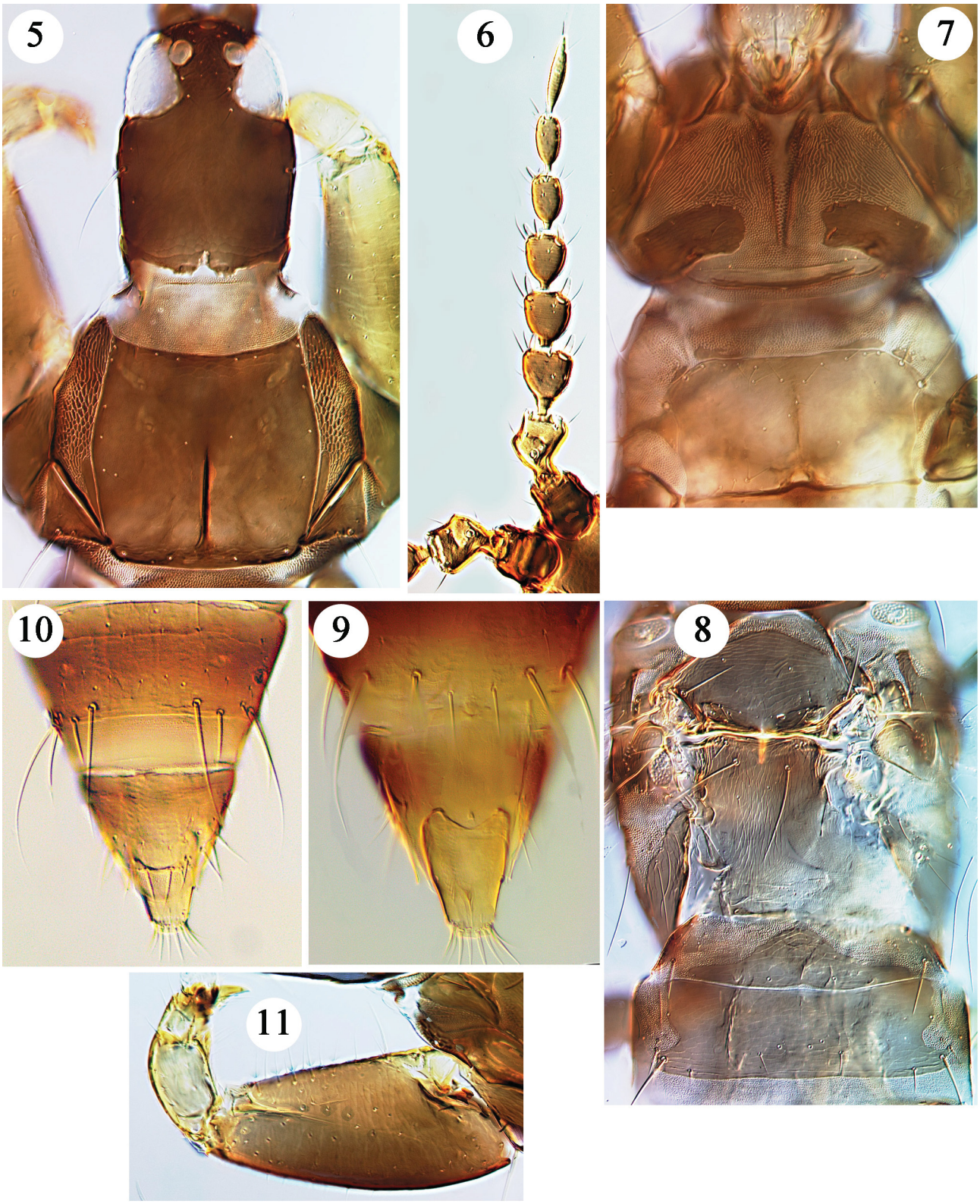
Bangithrips mei sp.n. (Figs 5–11)

Female macroptera. Head, thorax and abdomen brown, tube and apex of tergite IX much paler; antennal segments II and VIII paler than segments I and III–VII; mid and hind tibiae and tarsi clear yellow; major setae all pale; fore wing uniformly light brown. With the character states in the generic diagnosis.

Measurements (holotype female in microns). Body length 1950 (slightly contracted). Head, length 250; width medially 170; postocular setae 95. Pronotum, length 210; width 220; epimeral setae 120; coxal setae 125. Fore wing length 1000; sub-basal setae 25 and 35; 14 duplicated cilia. Tergite VIII median dorsal setae 115. Tergite IX setae, S1 25; S2 30; S3 35. Tube length 70; maximum width 55. Antennal segments I–VIII length, 50, 50, 55, 50, 50, 45, 50, 70.

Specimens studied. Holotype female macroptera, **Peninsular Malaysia**, **Selangor**, Kota Damansara, in malaise trap, vi.2011 (Ng, Y.F. & Nicholas), in the Natural History Museum, London.

Paratype: one female collected with holotype, in Centre for Insect Systematics, Universiti Kebangsaan Malaysia.



FIGURES 5–11. *Bangithrips mei*. **(5)** head & pronotum; **(6)** antenna; **(7)** pro- & mesosterna; **(8)** meso- & metanota, pelta & tergite II; **(9)** sternites VIII–X; **(10)** tergites VIII–X; **(11)** fore leg.

References

Dang, L.-H., Mound, L.A. & Qiao, G.-X. (2014) Conspectus of the Phlaeothripinae genera from China and Southeast Asia (Thysanoptera, Phlaeothripidae). *Zootaxa*, 3807 (1), 001–082.

http://dx.doi.org/10.11646/zootaxa.3807.1.1
Mound, L.A. (1972) Species complexes and the generic classification of leaf-litter thrips of the Tribe Urothripini (Phlaeothripidae). *Australian Journal of Zoology*, 20, 83–103.
https://doi.org/10.1071/ZO9720083
Mound, L.A. (1977) Species diversity and the systematics of some New World leaf-litter Thysanoptera (Phlaeothripinae; Glyptothripini). *Systematic Entomology*, 2, 225–244.
https://doi.org/10.1111/j.1365-3113.1977.tb00371.x
Mound, L.A. & Tree, D.J. (2017) Two new Australian fungus-feeding thrips in two new Plectrothripini genera (Thysanoptera, Phlaeothripinae) *Zootaxa*, 4273 (3), 443–446.
https://doi.org/10.11646/zootaxa.4273.3.10
Okajima, S. (1981) A revision of the tribe Plectrothripini of fungus-feeding Thysanoptera (Phlaeothripidae: Phlaeothripinae). *Systematic Entomology*, 6, 291–336.
https://doi.org/10.1111/j.1365-3113.1981.tb00441.x
Okajima, S. & Masumoto, M. (2014) Species-richness in the Oriental fungus-feeding thrips of the genus *Azaleothrips* (Thysanoptera, Phlaeothripidae). *Zootaxa*, 3846 (3), 301–347.
https://doi.org/10.11646/zootaxa.3846.3.1
ThripsWiki (2018) *ThripsWiki - providing information on the World's thrips*. Available from: http://thrips.info/wiki/Main_Page (16 January 2018)